CONTENTS OF VOLUME 15 · 1995

Polar Biology

Managing Editor

G. Hempel
Zentrum für Marine
Tropenökologie
Universitätsallee GW 1/A
D-28359 Bremen, Germany

Technical Editor

I. Hempel
Institut für Polarökologie
Universität Kiel, Physikzentrum
Wischhofstraße 1–3, Gebäude 12
D-24148 Kiel, Germany

Editors

V. Alexander, Fairbanks, USA
R. Bannasch, Berlin, Germany
D. Boltovskoy, Buenos Aires, Argentina
A. Clarke, Cambridge, UK
G. Høpner Petersen, Kopenhagen, Denmark
C. C. E. Hopkins, Tromsö, Norway
G. Hubold, Kiel, Germany
L. Legendre, Québec, Canada
R. I. Lewis Smith, Cambridge, UK
J. R. E. Lutjeharms, Rondebosch, South Africa
H. Marchant, Kingston, Australia
Y. Naito, Tokyo, Japan
G. di Prisco, Naples, Italy
P. H. Schalk, Amsterdam, The Netherlands
W. R. Siegfried, Rondebosch, South Africa
T. G. Smith, Québec, Canada
V. Spiridonov, Moscow, USSR
C. W. Sullivan, Los Angeles, USA
M. M. Tilzer, Konstanz, Germany
J. Valencia, Santiago, Chile
P. Vernon, Paimpont, France
W. F. Vincent, Québec, Canada

Springer

Polar Biology

Founded in 1982,
and edited by G. Hempel

Copyright

Submission of a manuscript implies: that the work described has not been published before (except in the form of an abstract or as part of a published lecture, review, or thesis); that it is not under consideration for publication elsewhere; that its publication has been approved by all coauthors, if any, as well as by the responsible authorities at the institute where the work has been carried out; that, if and when the manuscript is accepted for publication, the authors agree to automatic transfer of the copyright to the publisher; and that the manuscript will not be published elsewhere in any language without the consent of the copyright holders.

All articles published in this journal are protected by copyright, which covers the exclusive rights to reproduce and distribute the article (e.g., as offprints), as well as all translation rights. No material published in this journal may be reproduced photographically or stored on microfilm, in electronic data bases, video disks, etc., without first obtaining written permission from the publisher.

The use of general descriptive names, trade names, trademarks, etc., in this publication, even if not specifically identified, does not imply that these names are not protected by the relevant laws and regulations.

While the advice and information in this journal is believed to be true and accurate at the date of its going to press, neither the authors, the editors, nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, express or implied, with respect to the material contained herein.

Special regulations for photocopies in the USA: Photocopies may be made for personal or in-house use beyond the limitations stipulated under Section 107 or 108 of U.S. Copyright Law, provided a fee is paid. All fees should be paid to the Copyright Clearance Center, Inc., 21 Congress Street, Salem, MA 01970, USA, stating the ISSN 0722-4060, the volume, and the first and last page numbers of each article copied. The copyright owner's consent does not include copying for general distribution, promotion, new works, or resale. In these cases, specific written permission must first be obtained from the publisher.

The Canada Institute for Scientific and Technical Information (CISTI) provides a comprehensive, world-wide document delivery service for all Springer-Verlag journals. For more information, or to place an order for a copyright-cleared Springer-Verlag document, please contact Client Assistant, Document Delivery, Canada Institute for Scientific and Technical Information, Ottawa K1A 0S2, Canada (Tel: 613-993-9251; Fax: 513-952-8243; e-mail: cisti.docdel @ pro.ca).

Printers

Typeset by Macmillan India Ltd., Bangalore, India
Printed by Druckhaus Beltz, Hemsbach, Germany

© Springer-Verlag GmbH & Co. KG, Berlin Heidelberg 1995
Printed in Germany

Springer

Contents of Volume 15 · 1995

Acosta-Pomar L → Fabiano M
Agger CT → Dietz R
Agustí S, Mura MP, Satta MP: Water-mass influences on summer Antarctic phytoplankton biomass and community structure 15
Alasuutari S → Korhonen H
Amat JA → Carrascal LM
Andersen R → Pedersen HC
Andreoli C, Tolomio C, Moro I, Radice M, Moschin E, Bellato S: Diatoms and dinoflagellates in Terra Nova Bay (Ross Sea-Antarctica) during austral summer 1990 465
Aschman J → McMinn A
Atkinson A → Ward P

Bale JS → Strathdee AT
Banse K: Antarctic marine top predators revisited: homeotherms do not leak much CO_2 to the air 93
Barnes DKA, Clarke A: Seasonality of feeding activity in Antarctic suspension feeders 335
Bellato S → Andreoli C
Belyaeva GA → Mikaelyan AS
Bölter M: Distribution of bacterial numbers and biomass in soils and on plants from King George Island (Arctowski Station, Maritime Antarctica 115
Born EW → Dietz R
Boström S → Sohlenius B
Bruns T → Klages M
Bustamante J → Moreno J

Cantone G: Polychaeta "Sedentaria" of Terra Nova Bay (Ross Sea, Antarctica): Capitellidae to Serpulidae 295
Carrascal LM, Moreno J, Amat JA: Nest maintenance and stone theft in the Chinstrap penguin (*Pygoscelis antarctica*) 2. Effects of breeding group size 541
Casaux R → Coria N
Chapelle G, Peck LS: The influence of acclimation and substratum on the metabolism of the Antarctic amphipods *Waldeckia obesa* (Chevreux 1905) and *Bovallia gigantea* (Pfeffer 1888) 225
Charrassin J-B → Wilson RP
Chattopadhyay MK, Uma Devi K, Gopishankar Y, Shivaji S: Thermolabile alkaline phosphatase from *Sphingobacterium antarcticus* a psychrotrophic bacterium from Antarctica 215
Cherel Y: Nutrient reserve storage, energetics, and food consumption during the prebreeding and premoulting foraging periods of king penguins 209
Chernitsky AG → Christiansen JS
Chown SL → Marshall DJ
Christiansen JS, Chernitsky AG, Karamushko OV: An Arctic teleost fish with a noticeably high body fluid osmolality: a note on the navaga, *Eleginus navaga* (Pallas 1811), from the White Sea 303
Christiansen JS, George SG: Contamination of food by crude oil affects food selection and growth performance, but not appetite, in an Arctic fish, the polar cod (*Boreogadus saida*) 277
Clarke A → Barnes DKA
Coria N, Casaux R, Favero M, Silva P: Analysis of the stomach content of the blue-eyed shag *Phalacrocorax atriceps bransfieldensis* at Nelson Island, South Shetland Islands 349
Coria NR, Spairani H, Vivequin S, Fontana R: Diet of Adélie penguins *Pygoscelis adeliae* during the post-hatching period at Esperanza Bay, Antarctica, 1987/88 415
Crafford JE → Marshall DJ
Cripps GC: The occurrence of monounsaturated n-C_{21} and polyunsaturated C_{25} sedimentary hydrocarbons in the lipids of Antarctic marine organisms 253
Crisafi E → Fabiano M
Cummings VJ → James MR

Danovaro R → Fabiano M
Davídsdóttir B → Svavarsson J
Delù M → Tagliafierro G
Dietz R, Born EW, Agger CT, Nielsen CO: Zinc, cadmium, mercury and selenium in polar bears (*Ursus maritimus*) from Central East Greenland 175

Eicken H → Thomas DN
Ernsting G, Ginkel W van, Menken SBJ: Genetical population structure of *Trechisibus antareticus* (Coleoptera, Carabidae) on South Georgia and on the Falkland islands 523

Fabiano M, Danovaro R, Crisafi E, La Ferla R, Povero P, Acosta-Pomar L: Particulate matter composition and bacterial distribution in Terra Nova Bay (Antarctica) during summer 1989–1990 393
Falk K, Møller S: Satellite tracking of high-arctic northern fulmars 495
Faraldi G → Tagliafierro G
Favero M → Coria N
Fedak MA → Sjöberg M
Folkow L → Nordøy ES
Fontana R → Coria NR
Fraile ER → Vazquez SC
Freckman DW → Virginia RA
Froneman PW, Perissinotto R, McQuaid CD, Laubscher RK: Summer distribution of netphytoplankton in the Atlantic sector of the Southern Ocean 77

Gales R → Hedd A
George SG → Christiansen JS
Gibson J → McMinn A
Ginkel W van → Ernsting G
Gjertz I, Wiig Ø: The number of walruses (*Odobenus rosmarus*) in Svalbard in summer 527
Gómez I, Westermeier R: Energy contents and organic constituents in Antarctic and south Chilean marine brown algae 597
Gopishankar Y → Chattopadhyay MK
Gradinger R, Lenz J: Seasonal occurrence of picocyanobacteria in the Greenland Sea and central Arctic Ocean 447
Graham M → Hop H
Guinet C, Jouventin P, Malacamp J: Satellite remote sensing in monitoring change of seabirds: use of Spot Image in king penguin population increase at Ile aux Cochons, Crozet Archipelago 511
Gutt J: The occurrence of sub-ice algal aggregations off northeast Greenland 247
Gutt J → Klages M

Halvorsen O → Hemmingsen W
Haug T → Nilssen KT
Hedd A, Gales R, Renouf D: Use of temperature telemetry to monitor ingestion by a harbour seal mother and her pup throughout lactation 155
Helbling EW, Villafañe VE, Holm-Hansen O: Variability of phytoplankton distribution and primary production around Elephant Island, Antarctica, during 1990–1993 233
Hemmingsen W, Lile N, Halvorsen O: Search for seasonality in occurrence of parasites of cod, *Gadus morhua* L. in a fjord at 70°N 517
Higashi S → Sugawara H
Hirschfelder A → Sohlenius B
Hiruta S → Ohyama Y
Hodgson D → McMinn A
Holm-Hansen O → Helbling EW
Hop H, Graham M: Respiration of juvenile Arctic cod (*Boreogadus saida*): effects of acclimation, temperature, and food intake 359
Huntley ME → Lopez MDG

Ichii T → Ishii H
Ishii H → Shiomoto A
Ishii H, Terazaki M, Kawaguchi K, Nishikawa J, Naganobu M, Ichii T.: Distribution of salps near the South Shetland Islands during austral summer, 1990–1991 with special reference to krill distribution 31
Izaguirre I → Tell G

Jackson GD: The use of beaks as tools for biomass estimation in the deepwater squid *Moroteuthis ingens* (Cephalopoda: Onychoteuthidae) in New Zealand waters 9
Jackson JE: Notes on the biology of *Eudonia mawsoni* (Lepidoptera: Pyralidae) on subantarctic Macquarie Island 289
Jackson JE → Richardson AMM
James MR, Pridmore RD, Cummings VJ: Planktonic communities of melt ponds on the McMurdo Ice Shelf, Antarctica 555
Jochem FJ, Mathot S, Quéguiner B: Size-fractionated primary production in the open Southern Ocean in austral spring 381

Jouventin P → Guinet C
Jürgensen T → Kristiansen J

Karamushko OV → Christiansen JS
Kattner G → Thomas DN
Kawaguchi K → Ishii H
Klages M, Gutt J, Starmans A, Bruns T: Stone crabs close to the Antarctic Continent: *Lithodes murrayi* Henderson, 1888 (Crustacea; Decapoda; Anomura) off Peter I Island (68°51'S, 90°51'W) 73
Korhonen H, Alasuutari S: Dominance relations in captive groups of adult and juvenile arctic blue foxes (*Alopex lagopus*) 353
Koszteyn J, Timofeev S, Węslawski JM, Malinga B: Size structure of *Themisto abyssorum* Boeck and *Themisto libellula* (Mandt) populations in European Arctic seas 85
Kristiansen J, Wilken LR, Jürgensen T: A bloom of *Mallomonas acaroides*, a silica-scaled chrysophyte, in the crater pond of a pingo, Northwest Greenland 319
Kwaśniewski S → Szymelfenig M

La Ferla R → Fabiano M
Lage J → Wilson RP
Lara RJ → Thomas DN
Laubscher RK → Froneman PW
Laybourn-Parry J → Perriss SJ
Lenz J → Gradinger R
Lile N → Hemmingsen W
Lopez MDG, Huntley ME: Feeding and diel vertical migration cycles of *Metridia gerlachei* (Giesbrecht) in coastal waters of the Antarctic Peninsula 21

MacCormack WP → Vazquez SC
Malacamp J → Guinet C
Malinga B → Koszteyn J
Mandich A → Pestarino M
Marchant HJ → Perriss SJ
Marshall DJ, Chown SL: Temperature effects on locomotor activity rates of sub-Antarctic oribatid mites 47
Marshall DJ, Newton IP, Crafford JE: Habitat temperature and potential locomotor activity of the continental Antarctic mite, *Maudheimia petronia* Wallwork (Acari: Oribatei) 41
Massari A → Pestarino M
Mathot S → Jochem FJ
McConnell BJ → Sjöberg M
McMinn A, Gibson J, Hodgson D, Aschman J: Nutrient limitation in Ellis Fjord, eastern Antarctica 269
McQuaid CD → Froneman PW
Meier T → Sømme L
Menken SBJ → Ernsting G
Metz C: Seasonal variation in the distribution and abundance of *Oithona* and *Oncaea* species (Copepoda, Crustacea) in the southeastern Weddell Sea, Antarctica 187
Mikaelyan AS, Belyaeva GA: Chlorophyll "a" content in cells of Antarctic phytoplankton 437
Miller GD → Mund MJ
Møller S → Falk K
Morales-Nin B, Palomera I, Schadwinkel S: Larval fish distribution and abundance in the Antarctic Peninsula region and adjacent waters 143
Moreno J, Bustamante J, Viñuela J: Nest maintenance and stone theft in the Chinstrap penguin (*Pygoscelis antarctica*) 1. Sex roles and effects on fitness 533
Moreno J → Carrascal LM
Morescalchi MA → Tagliafierro G
Moro I → Andreoli C
Moschin E → Andreoli C
Mund MJ, Miller GD: Diet of the south polar skua *Catharacta maccormicki* at Cape Bird, Ross Island, Antarctica 453
Mura MP → Agustí S
Murray AWA → Ward P

Naganobu M → Ishii H
Nedwell DB, Walker TR: Sediment-water fluxes of nutrients in an Antarctic coastal environment: influence of bioturbation 57
Newton IP → Marshall DJ
Nielsen CO → Dietz R
Nilssen KT, Haug T, Potelov V, Timoshenko YK: Feeding habits of harp seals (*Phoca groenlandica*) during early summer and autumn in the northern Barents Sea 485
Nishikawa J → Ishii H
Nordøy ES, Folkow L, Schytte Blix A: Distribution and diving behaviour of crabeater seals (*Lobodon carcinophagus*) off Queen Maud Land 261

Ohyama Y, Hiruta S: The terrestrial arthropods of Sør Rondane in eastern Dronning Maud Land, Antarctica, with biogeographical notes 341
Ohyama Y → Sugawara H

Pakhomov EA: Natural age-dependent mortality rates of Antarctic krill *Euphausia superba* Dana in the Indian sector of the Southern Ocean 69
Palmer Locarnini SJ, Presley BJ: Trace element concentrations in Antarctic krill, *Euphausia superba* 283
Palomera I → Morales-Nin B
Pasternak AF: Gut contents and diel feeding rhythm in dominant copepods in the ice-covered Weddell Sea, March 1992 583
Peck LS → Chapelle G
Peck LS → Shreeve RS
Pedersen HC, Andersen R, Sæther B-E: Regulation of parental investment in the Antarctic petrel *Thalassoica antarctica*: an exchange experiment 65
Perriss S J, Laybourn-Parry J, Marchant H J: Widespread occurrence of populations of the unique autotrophic ciliate *Mesodinium rubrum* (Ciliphora: Haptorida) in brackish and saline lakes of the Vestfold Hills (eastern Antarctica) 423
Perissinotto R → Froneman PW
Pestarino M, Mandich A, Massari A: Evidence for enkephalin-like antigenic determinants in the gonads of the icefish *Chionodraco hamatus* 125
Pizarro H → Vinocur A
Potelov V → Nilssen KT
Poulet SA → Ward P
Povero P → Fabiano M
Powers LE, Freckman DW, Virginia RA: Spatial distribution of nematodes in polar desert soils of Antarctica 325
Powers LE → Virginia RA
Presley BJ → Palmer Locarnini SJ
Pridmore RD → James MR
Pütz K: The post-moult diet of Emperor Penguins (*Aptenodytes forsteri*) in the eastern Weddell Sea, Antarctica 457
Pütz K → Wilson RP

Quéguiner B → Jochem FJ

Radice M → Andreoli C
Radtke RL → Ruzicka JJ
Ramaiah N: Summer abundance and activities of bacteria in the freshwater lakes of Schirmacher Oasis, Antarctica 547
Renouf D → Hedd A
Richardson AMM, Jackson JE: The first record of a terrestrial landhopper (Crustacea: Amphipoda: Talitridae) from Macquarie Island 419
Rios Merino LN → Vazquez SC
Ruzicka JJ, Radtke RL: Estimating the age of Antarctic larval fish from otolith microstructure using light and electron microscopy 587

Sæther B-E → Pedersen HC
Saiz Salinas JI: Sipuncula of the southeastern Weddell Sea (Antarctica) 307
Satta MP → Agustí S
Schadwinkel S → Morales-Nin B
Schytte Blix A → Nordøy ES
Shiomoto A, Ishii H: Distribution of biogenic silica and particulate organic matter in coastal and oceanic surface waters off the South Shetland Islands in summer 105
Shivaji S → Chattopadhyay MK
Shreeve RS, Peck LS: Distribution of pelagic larvae of benthic marine invertebrates in the Bellingshausen Sea 369
Silva P → Coria N
Sjöberg M, Fedak MA, McConnell BJ: Movements and diurnal behaviour patterns in a Baltic grey seal (*Halichoerus grypus*) 593
Skoog A → Thomas DN
Sohlenius B, Boström S, Hirschfelder A: Nematodes, rotifers and tardigrades from nunataks in Dronning Maud Land, East Antarctica 51
Sømme L, Meier T: Cold tolerance in Tardigrada from Dronning Maud Land, Antarctica 221
Spairani H → Coria NR
Spiridonov VA: Spatial and temporal variabi-

lity in reproductive timing of Antarctic krill (*Euphausia superba* Dana) 161
Starmans A → Klages M
Strathdee AT, Bale JS: Factors limiting the distribution of *Acyrthosiphon svalbardicum* (Hemiptera: Aphididae) on Spitsbergen 375
Sugawara H, Ohyama Y, Higashi S: Distribution and temperature tolerance of the Antarctic free-living mite *Antarcticola meyeri* (Acari, Cryptostigmata) 1
Svavarsson J, Davídsdóttir B: Cibicides spp. (Protozoa, Foraminifera) as epizoites on the Arctic antenna-brooding *Arcturus baffini* (Crustacea, Isopoda, Valvifera) 569
Szymelfenig M, Kwaśniewski S, Węsławski JM: Intertidal zone of Svalbard. 2. Meiobenthos density and occurrence 137

Tagliafierro G, Faraldi G, Delù M, Morescalchi MA: Gut regulatory peptides in some Antarctic notothenioids 429
Tell G, Vinocur A, Izaguirre I: Cyanophyta of lakes and ponds of Hope Bay, Antarctic Peninsula 503
Terazaki M → Ishii H
Thomas DN, Lara RJ, Eicken H, Kattner G, Skoog A: Dissolved organic matter in Arctic multi-year sea ice during winter: major components and relationship to ice characteristics 477
Timofeev S → Koszteyn J
Timoshenko YK → Nilssen KT
Tolomio C → Andreoli C

Uma Devi K → Chattopadhyay MK

Vazquez SC, Rios Merino LN, MacCormack WP, Fraile ER: Protease-producing psychotrophic bacteria isolated from Antarctica 131
Villafañe VE → Helbling EW
Vinocur A, Pizarro H: Periphyton flora of some lotic and lentic environments of Hope Bay (Antarctic Peninsula) 401
Vinocur A → Tell G
Viñuela J → Moreno J
Vivequin S → Coria NR

Walker TR → Nedwell DB
Ward P, Atkinson A, Murray AWA, Wood AG, Williams R, Poulet SA: The summer zooplankton community at South Georgia: biomass, vertical migration and grazing 195
Węsławski JM → Koszteyn J
Węsławski JM → Szymelfenig M
Westermeier R → Gómez I
Wiig Ø → Gjertz I
Wilken LR → Kristiansen J
Williams R → Ward P
Wilson RP, Pütz K, Charrassin J-B, Lage J: Artifacts arising from sampling interval in dive depth studies of marine endotherms 575
Wood AG → Ward P

Indexed in *Current Contents*